

9th International Engineering Research Conference (Eureca 2017)

MATEC Web of Conferences Volume 152 (2018)

Selango, Malaysia
6 December 2017

Editors:

**S. N. Namasivayam
M. H. Fouladi
S. W. E. Phang
B. L. Chua**

**Y. H. Chow
L. C. Yong
A. S. M. Al-Obaidi**

ISBN: 978-1-5108-5874-9

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution license:
<http://creativecommons.org/licenses/by/2.0/>

You are free to:

Share – copy and redistribute the material in any medium or format.

Adapt – remix, transform, and build upon the material for any purpose, even commercial.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. The copyright is retained by the corresponding authors.

Printed by Curran Associates, Inc. (2018)

For additional information, please contact EDP Sciences – Web of Conferences
at the address below.

EDP Sciences – Web of Conferences
17, Avenue du Hoggar
Parc d'Activité de Courtabœuf
BP 112
F-91944 Les Ulis Cedex A
France

Phone: +33 (0) 1 69 18 75 75

Fax: +33 (0) 1 69 28 84 91

contact-edps@webofconferences.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

SOLID-LIQUID EXTRACTION KINETICS OF TOTAL PHENOLIC COMPOUNDS (TPC) FROM RED DATES	1
<i>Bee Lin Chua, Yen Leng Chen</i>	
DRYING KINETICS AND OPTIMISATION OF PECTIN EXTRACTION FROM BANANA PEELS VIA RESPONSE SURFACE METHODOLOGY	18
<i>Bee Lin Chua, Yek Cze Chong</i>	
CHARACTERISTICS STUDY OF PHOTOVOLTAIC THERMAL SYSTEM WITH EMPHASIS ON ENERGY EFFICIENCY	32
<i>Yong Chuah Yee, Hajibeigy Mohammad Taghi, Vaithilingam Chockalingam Aravind, Walvekar Rashmi Gangasa</i>	
SYNTHESIS OF A SUSTAINABLE SAGO-BASED VALUE CHAIN VIA FUZZY OPTIMISATION APPROACH	42
<i>Chong Jeffrey Hong Seng, Wan Yoke Kin, Andiappan Viknesh</i>	
PARAMETRIC STUDY FOR DEVULCANIZATION OF WASTE TIRE RUBBER UTILIZING DEEP EUTECTIC SOLVENT (DES)	61
<i>Walvekar Rashmi, Kunju Kishen, Saputra Ricky, Siddiqui Khalid, Ramarad Suganti</i>	
DESIGN OF BIOMASS COMBINED HEAT AND POWER (CHP) SYSTEMS BASED ON ECONOMIC RISK USING MINIMAX REGRET CRITERION	87
<i>Ling Wen Choong, Andiappan Viknesh, Kin Wan Yoke</i>	
DEVULCANIZATION OF WASTE TIRE RUBBER USING AMINE BASED SOLVENTS AND ULTRASONIC ENERGY	103
<i>Walvekar Rashmi, Afiq Zulkefly Mohammad., Ramarad Suganti, Khalid Siddiqui</i>	
REMOVAL OF DYE IN WASTEWATER BY ADSORPTION-COAGULATION COMBINED SYSTEM WITH HIBISCUS SABDARIFFA AS THE COAGULANT	119
<i>Nicholas Jian Hoong Ho, Ismail Nurhazwani</i>	
POTENTIAL OF HIBISCUS SABDARIFFA AND JATROPHA CURCAS AS NATURAL COAGULANTS IN THE TREATMENT OF PHARMACEUTICAL WASTEWATER	133
<i>Sibartie Sheena, Ismail Nurhazwani</i>	
SYNTHESIS AND OPTIMISATION OF A SUSTAINABLE WASTEWATER TREATMENT PLANT VIA MATERIAL FLOW COST ACCOUNT (MFCA)-BASED APPROACH	150
<i>Siew Run Ting, Wan Yoke Kin, Andiappan Viknesh</i>	
PRELIMINARY STUDY ON EFFECT OF CHEMICAL COMPOSITION ALTERATION ON ELASTIC RECOVERY AND STRESS RECOVERY OF NITRILE GLOVES	171
<i>Tan Kai Yang, Phang Siew Wei, Phang Chee Kin, Lang Choh Jing, Pang Goh Ching, Ban Wong Chong, Ting Tee Tiam</i>	
PROCESS DEBOTTLENECKING AND RETROFIT OF PALM OIL MILLING PROCESS VIA INOPERABILITY INPUT-OUTPUT MODELLING	181
<i>May Tan May, Andiappan Viknesh, Wan Yoke Kin</i>	
COAGULANT DIPPING TIME AND TEMPERATURE OPTIMISATION FOR LATEX GLOVE UNEVEN COATING INVESTIGATION	199
<i>Than Loong, Phang Siew Wei, Ho Kin Nam</i>	
ASSESSMENT OF NATURAL DEEP EUTECTIC SOLVENT PRETREATMENT ON SUGAR PRODUCTION FROM LIGNOCELLULOSIC BIOMASS	213
<i>Wan Yoon Li, Mun Yuen Jun</i>	
SUPPRESSION OF GROUND BORNE VIBRATION INDUCED BY HIGH-SPEED LINES	223
<i>Mohamed Rathu Ali, Hosseini Fouladi Mohammad, Narayana Namasivayam Satesh, Mamta Hasina</i>	
NUMERICAL ANALYSIS AND GEOMETRY OPTIMISATION OF VERTICAL VANE OF ROOM AIR-CONDITIONER	240
<i>Al-Obaidi Abdulkareem Sh. Mahdi, Yin Chan Wei, Myan Felicia Wong Yen, Chen Yan Yao</i>	
THE FABRICATION OF NON-IMPLANT 3D PRINTED NOSE	254
<i>Chuan Yong Leng, Andrews Elliot</i>	
ASSESSING BIOINSPIRED TOPOGRAPHIES FOR THEIR ANTIFOULING POTENTIAL CONTROL USING COMPUTATIONAL FLUID DYNAMICS (CFD)	263
<i>Ling Jacky, Myan Felicia Wong Yen</i>	
DESIGN AND OPTIMISATION OF HOME SCALE GREYWATER RECYCLING PACKAGE	271
<i>Arugam Kalaichelvan, Ghadimi Azadeh, L. H. Chang</i>	
MECHANICAL CHARACTERIZATION OF ZIRCONIA CERAMIC COMPOSITE	285
<i>Jin Kelvin Chew Wai, Dickson Kam, Singh Ramesh</i>	

PREPARATION AND CHARACTERIZATION OF DURIAN HUSK FIBER FILLED POLYLACTIC ACID BIOCOPOLIMERS	295
<i>Lee Man Chee, Koay Seong Chun, Chan Ming Yeng, Pang Ming Meng, Chou Pui May, Tsai Kim Yeow</i>	
OPERATIONAL RESEARCH ON DESIGN AND PROCESS OPTIMIZATION OF OZONE WATER APPLICATION IN KITCHEN	302
<i>Lee Zhun Jing, Chou Pui May, Hoo Choon Lih, Lu Daniel</i>	
STABILISING AN INVERTED PENDULUM WITH PID CONTROLLER	319
<i>Lim Yon Yaw, Hoo Choon Lih, Felicia Wong Yen Myan</i>	
EVALUATION OF SIPIC01 AND SIPIC02 ON MOTOR SPEED CONTROL	333
<i>Wong Kah Kit, Hoo Choon Lih, Mohyi Mohd Hardie Hidayat</i>	
ANALYSIS OF A HYBRID MECHANICAL REGENERATIVE BRAKING SYSTEM	350
<i>Toh Xiang Wen Mathew, Tong Kum Tien Douglas</i>	
SINTERED PROPERTIES OF STAINLESS STEEL-DOPED Y-TZP CERAMICS	365
<i>Chew Wai Jin Kelvin, Minggat Mervyn Marlon Anak Mathew, Singh Ramesh</i>	
DESIGN AND ANALYSIS OF COLLAPSIBLE SCISSOR BRIDGE	378
<i>Biro Mohamad Nabil Aklif, Abu Bakar Noor Zafirah</i>	
COMPARISONS OF FLOW PATTERNS OVER A HIERARCHICAL AND A NON-HIERARCHICAL SURFACE IN RELATION TO BIOFOULING CONTROL	388
<i>Bin Ahmad Fawzan Mohammed Ridha, Wong Yen Myan Felicia</i>	
THE ENHANCEMENT OF PRE-STORAGE FILTRATION EFFICIENCY FOR THE RAINWATER HARVESTING SYSTEM IN MALAYSIA	400
<i>Sion Ong Yoong, Sim Ong Ken, Tan Y.k., Ghadimi Azadeh</i>	
FABRICATION OF NON-IMPLANT 3D PRINTED SKIN	415
<i>Chuan Yong Leng, Pandya Shivani Amish Kumar</i>	
LIFT AND DRAG OF NON-CONVENTIONAL WINGS AT SUBSONIC SPEEDS AND ZERO ANGLE OF ATTACK - AN EXPERIMENTAL INVESTIGATION	424
<i>Al-Obaidi Abdulkareem Shafiq Mahdi, Wei Ting Chern</i>	
IN-SITU STUDY OF SEATING STATIC COMFORT IN PASSENGER VEHICLES	439
<i>Seraj Umi Salmah, Aladdin Mohd Farid</i>	
PREPARATION AND CHARACTERIZATION OF WOOD PLASTIC COMPOSITE MADE UP OF DURIAN HUSK FIBER AND RECYCLED POLYSTYRENE FOAM.	456
<i>Koay Seong Chun, Subramanian Varnesh, Chan Ming Yeng, Pang Ming Meng, Tsai Kim Yeow, Cheah Kean How</i>	
DEVELOPMENT OF A PID CONTROLLED ARDUINO-BASED STABILISER	463
<i>Wah Yee Lyn, Hoo Choon Lih, Felicia Wong Yen Myan, Tai Jun Jet</i>	
ELECTRICAL ENERGY HARVESTING FROM COOKER'S WASTED HEAT WITH USING CONDUCTION COOLING	476
<i>Amouzard Mahdiraji Wincent Ghafour</i>	
ANTI-WINDUP PI CONTROLLER, SIPIC FOR MOTOR POSITION CONTROL	486
<i>Wong Kah Kit, Hoo Choon Lih, Mohyi Mohd Hardie Hidayat</i>	
DESIGN AND FABRICATION OF SMALL VERTICAL-TAKE-OFF-LANDING UNMANNED AERIAL VEHICLE	509
<i>Abd Rahman Yasir Ashraf, Hajibeigy Mohammad Taghi, Al-Obaidi Abdulkareem Shafiq Mahdi, Cheah Kean How</i>	
THE APPLICATION OF IMAGE PROCESSING TO SOLVE OCCLUSION ISSUE IN OBJECT TRACKING	524
<i>Cheong Yun Zhe, Chew Wei Jen</i>	
COMPARATIVE STUDY BETWEEN PLANAR AND BENT ANTENNA CHARACTERIZATION	534
<i>Zheng Tung Lau, Amouzed Mahdiraji Ghafour, Chia Ping Lee</i>	
PREDICTION OF CYCLISTS MOVEMENT IN DIFFERENT TERRAIN CONDITIONS	545
<i>A/L V.Nagarrettinam Mahesh, CV Aravind, Nabi Poor Mohsen</i>	
DESIGN ANALYSIS OF A DUAL ROTOR PERMANENT MAGNET MACHINE DRIVEN ELECTRIC VEHICLE	556
<i>Izzat Bin Zainuddin Mohd, Aravind CV</i>	
FORCE CHARACTERISTICS ANALYSIS FOR LINEAR MACHINE WITH DC FIELD EXCITATIONS	567
<i>A/L Krishna Preshant, CV Aravind, Saadha Aminath, Azhar F.</i>	
THERMAL ENERGY RECOVERY THROUGH OPTIMAL SALT CONCENTRATION IN A PARABOLIC TROUGH SYSTEMS	579
<i>Ramsurn Rikesh, Aravind CV</i>	
MAGNETIC GEARED RADIAL AXIS VERTICAL WIND TURBINE FOR LOW VELOCITY REGIMES	588
<i>Wei Wei Teow, Aravind CV</i>	

A STUDY ON THE USED OF BLUETOOTH DETECTORS AT A FIX LOCATION FOR VEHICLE SPEED ESTIMATION	598
<i>Neow Way Shyun, Chung Edwin C.Y.</i>	
DESIGN ANALYSIS OF TAPER WIDTH VARIATIONS IN MAGNETLESS LINEAR MACHINE FOR TRACTION APPLICATIONS	615
<i>Saadha Aminath, Aravind CV, Krishna Preshant, Azhar F.</i>	
PROPOSED FRAMEWORK OF HYBRID PHOTOVOLTAIC THERMAL SYSTEMS TO ECOTOURISM IN MALAYSIA	624
<i>Hajibeigy Mohammad Taghi, Aravind CV, Gangasa Walveka Rashmi</i>	
LINKING LIBERATORY PEDAGOGY TO ENGINEERING AND SUSTAINABLE DEVELOPMENT	635
<i>Moganakrishnann Jayasubamani Arvi S., Namasivayam Satesh Narayana, Ismail NurHazwani</i>	
Author Index	